

ABSTRACT OF THE DISCLOSURE

It is an object to increase a reprocessing speed of spent nuclear fuel and to obtain uranium having a high purity and a plutonium mixture reusable as it is at a low cost through a simple procedure.

The spent nuclear fuel 1 is subjected to fluorination using fluorine 2 in a fluorination step 3, and as a result, uranium, a mixture of uranium and plutonium and a fission product are separated and recovered independently of one another. The plutonium fluoride volatilized in the fluorination is recovered along with a fixing agent and then passed through an oxidative conversion step 8, thereby recovering a mixture of uranium and plutonium oxides 9. Since the uranium can be recovered in a high purity, it is managed very easily when reused or saved. Further, since the uranium and plutonium are recovered as a mixture thereof, fuel reproduction cost is decreased and prevention of proliferation is strengthened.